**EXAMPLE OF DoD PROPOSALS**

- **Navy**
- **DNA**

**NAVY**

# Los Alamos
NATIONAL LABORATORY

## Work for Other Federal Agencies
## Proposal Approval

| LANL Proposal Number | Project | LANL Program Code |
|---|---|---|
| R-1281-94-0 | New ☐ continuing ☒ | RR97 |

**Proposal Title**
ASBESTOS PENETRATION TEST FOR GARMENT MATERIALS

**Sponsoring Agency**
U.S. Navy Clothing and Textile Center

| Agency Contact | Telephone |
|---|---|
| Ms. Michelle Cooper | (508) 651-4785 |

**Agency Mailing Address**
21 Strathmore Road. Natick, Massachusetts

| Originator | Org. | MS | Telephone | Signature | Date |
|---|---|---|---|---|---|
| Joseph F. Stampfer | HS-5 | K553 | 667-7343 | J. F. Stampfer | 12/2/93 |

### Approvals

| Approved by | Org | MS | Phone | Approv | Revis | Signature | Date |
|---|---|---|---|---|---|---|---|
| Line<br>B. C. Hargis | HS-S | K486 | 7-5231 | ☒ | ☐ | Daniel H. MacCalla | 17,>, |
| Program<br>B. D. Reinert | HS-5 | K553 | 7-5775 | ☒ | ☐ | Bruce D. Reinert | 12/6/93 |
| Financial<br>M. C. Lujan | BUS-2 | A111 | 7-2680 | ☑ | ☐ | Cecilia Lujan | 12/9/93 |
| DoD/BUS*<br>W. L. Kirchner | DoD | F613 | 7-1775 | ☐ | ☐ | | |

*Director's approval is required for special access programs.

Ms. Michelle Cooper sent an informational copy this proposal. If You have any questions about this proposal, please call Bruce Reinert, (505) 667-5775, or Ted Stampfer, (505) 667-7343.

Sincerely,

Walter L. Kirchner
Program Director for Department Of Defense Programs

Attachment: a/s

Cy: Joseph F. Stampfer, HS-5, MS K553
Bruce D. Reinert, HS-5, MS K553
Barbara C. Hargis, HS-5, MS K486
Dennis Erickson, QESHA, MS K491
Melissa Robinson, FIN- 12, MS K491
G. J. Garcia, BUS-2, MS Al 11
Proposal Fide, R&D Section, MS K553
CRM-4, MS A150

**Los Alamos**
NATIONAL LABORATORY

*Department of Defense program.*
DoD, MS F613
Los Alamos, New Mexico 87545
(505) 667-1775, FAX (505)666—673

Date: December 6, 1993
Refer to: R-1281-94-0

Us Department of Energy
Attn, Robert Y. Lowrey, Director
Work for Others Technology Division (WFOTD)
DOE Albuquerque Operations Office
P.O. Box 5400
Albuquerque, NM 87185-5400

Dear Mr. Lowrey:

Los Alamo. proposal R1281-94-0, Asbestos Penetration Test for Garment Materials

The attached proposal is for developing a system for testing garment materials for protection against asbestos fibers. We believe we are uniquely qualified to perform this work as we originally developed the fabric test method the Navy now wants to modify, by this proposal, to meet new requirements. Also, we developed the method now used nationwide for asbestos counting and we have a national reputation in the field of asbestos generation and problems associated with its use. We have the equipment expertise, and facilities for performing this work.

The proposed work is within the scope of the Laboratory Institutional Plan, and can be done without interference with other current or future DOE commitments at an estimated cost of $50K in FY 1994.

To the best of my knowledge, this work will not place the Laboratory in direct competition with the public or private sector.

If you concur with the contents of this proposal, please forward it to the following agency:

U.S. Navy Clothing and Textile Research Center
Attn: Ms. Michelle Cooper
21 Strathmore Road
Natick, Massachusetts 01760-2490

**Los Alamos**
NATIONAL LABORATORY

*Department of Defense Programs*
DoD, MS F6513
Los Alamos, New Mexico 87545
(505) 667—1775. FAX. 665—5739

*Date:* December 6, 1993
*Refer to:* R-1281-94-0

U.S. Navy Clothing and Textile Research Center
Attn: Ms. Middle Cooper
21 Strathmore Road
Natick, MA 01760-2490

Dear Ms. Cooper:

Los Alamos Proposal R-1281-94-0, Asbestos Penetration Test for Garment Materials

Enclosed is a copy Of Los Alamos proposal R-1281-94-0. This copy of the proposal is being sent to you for your information only. The official transmittal the proposal will be from the Department Of Energy, Albuquerque Operations Office (DOE/AL). To assist you in working with DOE/AL, we have enclosed their administrative instructions and the DOE brochure for doing work with the DOE.

If U.S. Clothing and Textile Research Center decides to fund the proposed effort, the funding document should be sent to the following:

US Department of Energy
Attn: Robert Y. Lowrey, Director
Work for Others Technology Division (WFOTD)
DOE Albuquerque Operations Office
P. O. Box 5400
Albuquerque, NM 87185-5400

The funding document should include the following information:

1. LOS Alarms National Laboratory's (LANL's) proposal number and title,
2. LANL's technical contact,
3. Sponsoring agency's technical contact,
4. Noncompetition statement (refer to attached administrative instruction #3),
5. Statement as to whether or not this incrementally funded (refer to attached administrative instruction #6).

The DOE requires that you state that the project is unclassified and that no classified material will be generated during the course of this work. please provide this information to the DOE along with the finding document.

It would also be helpful if you would send an informational copy of the funding document directly to the following individual:

Los Alamos National Laboratory
Attn: Bruce D. Reinert
Research and Development Section, HS-5
P. O. Box 1663, MS K553
Los Alamos, NM 87545

Technical questions should be directed to the Project Leader, Ted Stampfer, (505) 667-7343.

sincerely,

Walter L. Kirchner
Program"DirectorforDepartmcntofhfemePm—

Enclosures: a/s

Cy: Joseph F. Stampfer, HS-5, MS K553
Bruce D. Reinert, HS-5, MS K553
Barbara C. H–is, HS-5, MS K486
Dennis Erickson, QESHA, MS K491
Melissa Robinson, FIN-12, MS K491
G. J. Garcia, BUS-2, MS Al 11
Proposal File, R&D Section, MS K553
CRM-4, MS A150

# A Proposal for

# ASBESTOS PENETRATION TEST FOR GARMENT MATERIALS

**To be Performed by:**

Los Alamos National Laboratory
Los Alamos, NM 87545
(under DOE contract W-7405-ENG-36)

**Submitted to:**

US. Navy Clothing and Textile Research Center
21 Strathmore Road
Natick, Massachusetts 01760-2490

**Proposed by:**

Joseph F. Stampfer

December 6, 1993

## ASBESTOS PENETRATION TEST FOR GARMENT MATERIALS

### I. Introduction

There is a need for a system to test protective clothing materials for penetration by asbestos fibers under conditions of. constant, low pressure differential. The purpose this work is to develop such a system.

### . Technical Description

Current aerosol penetration testing Of Protective clothing materials is conducted under specified, constant flow conditions. Many materials, however, are air impermeable. Others require much higher test pressure differentials to produce the specified flow than would ever exist between the inside and outside of a garment while being worn. Penetration of asbestos fibers through a suit is dependent this airflow. The fibers are carried with the air through holes. gaps, seams, etc. The number of fibers which will penetrate in a given time is, therefore, directly a function the airflow rate. While it would appear obvious that, if there is no airflow, there is no fiber penetration, manufacturers of air impermeable materials are unable to validate their material's performance because they cannot perform the test at the required airflow. For materials which have finite but low permeatility, pressures greatly in excess of any which would be seen in practice are required. To overcome these problems of testing materials at a constant airflow, we are developing a method which would require a specified, constant pressure differential across the material samples.

### III. Proposed Scope Of Work

**Phase I–validation of System with Oil Aerosols**
The system as presently constituted has a flow chamber with six sampling ports attached. The functioning of the system when only one sampling port was installed, at an earlier stage, was briefly validated. We will now evaluate the system with all six ports using anon-fibrous, oil, aerosol generator and optical detector. This generator and detector are already in place and functioning. Tyvek™ will be the material used.

The absolute number Of Particles which will penetrate from a given challenge concentration under this proposed test protocol will usually be fewer than would be true under the constant flow protocol. The reason for this is that the flow under constant low pressure differentials usually will be less than that in the old, constant flow test This might appear to invalidate this new test procedure particularly if.. particles are seen when, under the old test procedure, penetrating particles are collected. Such results actually would indicate that the old test subjected the materials to unreasonably stringent test conditions.

**Phase II–Installation Of Asbestos Generator**
In this phase the non-fibrous aerosol generator will be replaced with one to produce amphibole asbestos fibers and the optical detector replaced with an asbestos aerosol, air monitor. This generator will be one used in previous asbestos research at Los Alamos. The asbestos aerosol. air monitor is new and has been delivered. Again, Tyvek will be used in the evaluation.

**Phase III–Validation of System with Asbestos**
At least six experiments with Tyvek will be conducted to validate the asbestos monitor's performance. penetrating fibers will be counted with the air monitor and collected on filters. h filters will be counted by TEM and OM and the results compared with the air monitor.

**Phase IV–Fabric Testing**
Any remaining effort in this program will be devoted to testing fabrics of interest to the Navy.

## IV. Schedule/Milestones

Work will begin at Los Alamos upon receipt of authorization from the Department of Energy, Albuquerque Operations off,.., to proceed with the proposed project.

| Phase I | Months from Start of Program |
|---|---|
| validating the six sample port system using non-fibrous aerosols | 2 |
| **Phase II** Installation of asbestos generator and asbestos aerosol, air monitor | 2 |
| **Phase III** validation Of System with asbestos fibers | 3 |
| **Phase Iv** Testing of different fabrics | 2 |

## V. Financial Requirements

The cost estimate for the proposed project is shown on the attached Funding Profile and Cost Estimate Summary. If funding is received three months or more after the proposed of the project, the cost estimate is subject to revision.

## VI. Reporting

Monthly rpots will be sent to the sponsor by the 15th the month following the end of the month. A final report will be provided to the sponsor upon completion of the project.

## VII. Management and Personnel

Joseph Stampfer, (505) 667-7343, MS K553, is the Project Leader responsible for the technical, schedule, and financial performance the work The Project Leader is the principal point Of Contact with the sponsor.

Bruce Reinert, (505) 667-5775, MS K553, is the Program Manager responsible forth? overall execution of the proposed project, liaison between Los Alamo. and the sponsoring agency, and sponsor satisfaction.

## VIII. Property Management

Property, buildings/structures, and/or equipment that is acquired with sponsor funding will be disposed according to instructions provided by the sponsor. Otherwise, capital equipment will revert to the DOE and be retained at the Laboratory at the termination of the project.

## IX. ES&H Issues

An ES&H questionnaire was submitted to the appropriate parties. We envision no difficulties even though asbestos will be used. The apparatus will operate under negative pressure with dual I–EPA filters. The exhaust.. the fume hood in which the experiments will be conducted is also fitted with a HEPA filter. Waste will be handled in accordance with Laboratory procedures. There should be no additional costs due to the use of asbestos.

## X. Classification and Security

This project will not involve generating or handing classified information or materials at Los Alamos. At the time the funding document is sent to the DOE, the Sponsor Will provide a written statement indicating that the project is unclassified.

## XI. Related Work/Technical References

Not applicable.

**Los Alamos**
NATIONAL LABORATORY

# Work for Others Funding Profile and Cost Estimate Summary .

**LANL Proposal Number:** R-1281-94-0 **LANL Program Code:** RR97

**Proposed Starting Date:** 01/04/94 **Proposed Completion Date:** 09/30/94

| Costs ($ in thousands) | Prior FY | FY94 | FY95 | FY96 | Total |
|---|---|---|---|---|---|
| Total direct FTE cost | 19.2 | 16.8 | | | 36.0 |
| Overhead | 16.3 | 13.9 | | | 30.2 |
| Materials and services | 13.0 | 17.7 | | | 30.7 |
| Subcontracts and major procurement | | | | | |
| Total operating costs | 48.5 | 48.4 | | | 96.9 |
| DOE departmental overhead* | 1.5 | 1.6 | | | 3.1 |
| Total operating costs, including departmental overhead | 50.0 | 50.0 | | | 100.0 |
| Continuity funding** | | | | | |
| TOTAL FUNDS REQUESTED | 50.0 | 50.0 | | | 100.0 |

* A DOE departmental overhead rate of 3.2% in FY94 (4.3% in FY95 and beyond) is incorporated into the total funding requirements to recover DOE costs incurred in the management and oversight of non-DOE-sponsored programs.

** To ensure program continuity, a minimum of three month's level-of—effort funding is required by the Department Of Energy, Albuquerque Operations office.

**Los Alamos**
**NATIONAL LABORATORY**

# NON-DOE PROPOSAL FINANCIAL ESTIMATE WORKSHEET

FOR FY 1994

($ IN THOUSANDS)

| Proposal No. | FormB Coda | Funding Agency | Title | | | |
|---|---|---|---|---|---|---|
| R-1281-94-0 | RR97 | U.S. NAVY | Asbestos Penetration for Garment Materials | | | |
| z-—r 80528 | Program Manager | Bruce D. Reinert | office: Hs-5 | Mail Stop: K553 | Telephone: 66 | |
| z-Number 38098 | Project Leader | Joseph F. Stamper | Office: Hs-5 | Mail stop: K553 | Te 667-7343 | |
| Z-Number 92771 | Division Fiscal Contact | Melissa Robinson | Organization: BUS 8/9 | Mail Stop: K491 | Te 66 | |
| Z-Number | Program Fiscal Contact | Cecilia Lujan | Organization: BUS-2 | Mail Stop: A111 | Te 66 | |

| INPUT REQUIRED: | Program AD | Program Director | MTA | AA | FC FIN USE ONLY: |
|---|---|---|---|---|---|
| | 0 | 0 | D | T | |

| Organization Cost Center: | SM FTE | SM Salary | Other FTE | Oth Salary | Total Salary | Burden | Total FTE cost | Material & Services | Procurement | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5705 | 0.17 | 12.2 | 0.1 | 4.6 | 16.8 | 13.0 | 30.7 | 13.1 | | |
| 5750 | | | | | | | | 4.0 | | |
| 7263 | | | | | | | | 0.6 | | |
| | | | | | | | | 0.0 | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| TOTALS | 0.17 | 12.2 | 0.1 | 4.6 | 16.8 | 13.9 | 30.7 | 17.7 | 0.0 | 48.4 |

**Please** check appropriately.
**New** **continuing** x

Is any part of this project **classified?**
Yes **No** X

| SUMMARY | |
|---|---|
| Total Operating cost | |
| DOE Departmental Overhead (3.2% of Total Operating | |
| Total including Departmental Overhead | |
| continuity | |
| TOTAL REQUESTED | 50.0 |

**Do these costs** any **construction or modification** of **facilities?**
Yes **No** X

| Completed By | Date: | Financial Operations Approval | Date: |
|---|---|---|---|
| Melissa Robinson | 12/10/93 | Melissa Robinson | 12/9/93 |

** PLEASE NOTE: SPECIAL ACCESS PROGRAMS REQUIRE THE APPROVAL OF THE LABORATORY DIRECTOR
(See Director's Memo dated 29 May 1990)

Cecilia Lujan 12/14/93

**Los Alamos . .**
NATIONAL LABORATORY

**Work for Others**
**Proposal Summary Information**

LAM Program Code: **RR97**
B&R Number: 40-04-03-30-9

1. **Proposal:**

ASBESTOS PENETRATION TEST FOR GARMENT MATERIALS

2. LANL Project Leader:

Joseph F. **Stampfer**
HS-S
667-7343

3. LANL Program Manager:

Bruce D. **Reinert**
HS-5
667-5775

4. **Sponsoring Agency:**

U.S. Navy Clothing and Textile **Research** Center

21 **Strathmore Road**

**Natick,** Massachusetts 01760-2490

5. Sponsoring Agency Contact:

| | |
|---|---|
| **Zander Krowitz** | Michelle Cooper |
| Budget **Officer** | Textile Technologist |
| (508) 651–4196 | (508) 651–4785 |

6. Technical Description:

To develop a system to test breathable fabrics for their ability to protect against asbestos under conditions of a constant pressure differential.

**7. Unique LANL Capability:**

We originally developed the fabric test method the Navy now wants to modify, by this proposal, to meet new requirements. We developed the method now used nationwide for asbestos counting, and we also have a national reputation in the field of asbestos generation and the problems associated with its use. We have the equipment, expertise, and the facilities for performing this work

**8. Deliverables:**

. Six sample port system for use with non-fibrous aerosols

. Six sample port system for use with fibrous aerosols

. Fabric sample tests

**9. Schedule and Milestones:**

Proposed starting date: 01/04/94 Proposed completion date: 09/30/94
Major milestones by fiscal year:

| Description | Date |
|---|---|
| validation of six-sample port system with non-fibrous aerosols | 03/01/94 |
| Installation of asbestos generator and detection system | 05/01/94 |
| Validation with asbestos fibers | 08/01/94 |
| Fabric tests | 09/30/94 |

**10. Funding Profile ($ in thousands) by Fiscal Year (FY):**

| Prior FYs | FY94 | FY | FY | FY | Total |
|---|---|---|---|---|---|
| $50K | $50K | | | | $100K |

11. **LANL Program Area** (select one):

| | | | | | |
|---|---|---|---|---|---|
| (a) | Nuclear Weapons **RD&T** | ☐ | (h) | Environment | ☐ |
| (b) | Nuclear Materials | ☐ | (i) | Industry | ☐ |
| (c) | **Reconfiguration/Complex** 21 | ☐ | (j) | space | ☐ |
| (d) | Defense Technologies | ☒ | (k) | Transportation | ☐ |
| (e) | Intelligence | ☐ | (l) | Health and **Biotechnologies** | ☐ |
| (f) | Nonproliferation | ☐ | (m) | Basic Research | ☐ |
| (g) | Energy | ☐ | | | |

12. **Additional Information:** Provide additional information for "yes" answers on the supplemental sheet.

| | | | |
|---|---|---|---|
| (a) | Are other DOE facilities involved? | Yes ☐ | No ☒ |
| (b) | **Is there private industry or university involvement?** | yes ☐ | No ☒ |
| (c) | Will there be **construction/facility** modifications? | Yes ☐ | No ☒ |
| (d) | Am there planned capital **equipment** acquisitions? | Yes ☐ | No ☒ |
| (e) | Is there a related Memorandum of understanding or Memorandum of Agreement? | Yes ☐ | No ☒ |
| (f) | Are foreign **nationals/organizations** involved? | Yes ☐ | No ☒ |
| (g) | Will there be **work/travel** outside the continental US **(OCONUS)?** If ''yes," complete **WFO-7, OCONUS** Activity Questionnaire. | Yes ☐ | No ☒ |
| (h) | Does this work involve **ADP procurement** ? **(This** includes computer equipment, software, and telecommunications.) | **Yes** ☐ | No ☒ |
| (i) | Do services provided constitute **sharing of excess data processing capacity with users from another government agency?** | **Yes** ☐ | No ☒ |
| (j) | **Are there plans to use subcontractors? Attach brief description of and justification for subcontracting on supplemental sheet.** **Estimated total subcontract cost: $** **Estimated subcontract % of total costs: %** | **Yes** ☐ | No ☒ |
| (k) | Will the work be sold back to DOE? | Yes ☐ | No ☒ |
| (l) | Will there be radio frequency spectrum applications? | Yes ☐ | No ☒ |
| (m) | Is this **a jointly funded project?** | Yes ☐ | No ☒ |

(n) Does project involve space nuclear reactor, noncommercial power reactor, or radioisotope power source work (excluding NRC, fusion and weapons-related activities, naval propulsion reactors, and experimental reactors)? @E N 4300.4 dated 1/1493.) Yes ☐ No ☒

(o) Does project involve nuclear proliferation detection technology-related non-DOE funded work? (DOE 4300.2B, Change 3, paragraph 10.k.(14) dated 1/7/93.) If "yes," send information copy of this proposal to the Director for Nonproliferation and International Security (NIS), MS F650. Yes ☐ No ☒

(P) Preliminary Security Classification:

☒ Unclassified

The sponsor must provide a statement along with the funding document, that states that the project is unclassified and that no classified material will be generated during the course this work.

☐ Classified

The Sponsor has provided classification guidance for this project (see attached WFO-6, "classification Guidance and Security Considerations Certification," Item l).

This project involves special security interests as defined in DOE Order 5634.1B, Chapter II, page II-8, paragraph 3b. (see attached WFO-6, "classification Guidance and Security Considerations Certification," Item 2).

Note: If this is a special access program, contact Terry Hawkins, DD/NIS at 7-1212.

(q) Environment, Safety & Health Issues

A completed and signed WFO-5, "Environmental, Safety, and Health (ES&H) Documentation for Proposals" form must be included in the proposal package.

# Los Alamos
NATIONAL LABORATORY

## Work for Others
## Environmental, Safety, and Health (ES&H)
## Documentation for proposals

| LANL Proposal Number | Project | LANL Program Code |
|---|---|---|
| R-1281-94-0 | New ☐ Continuing ☒ | RR97 |

**Proposal Title**
ASBESTOS PENETRATION TEST FOR GARMENT MATERIALS

**Sponsoring Agency**
U.S. Navy Clothing and Textile Research Center

| Agency Contact | Telephone |
|---|---|
| Ms. Michelle Cooper | (508)6714785 |

**Agency Mailing Address**
21 Strathmore Road, Natick, Massachusetts 01760—2490

| Project Leader | Org. | MS | Telephone |
|---|---|---|---|
| Joseph F. Stampfer | HS-5 | K553 | 667-7343 |

All Los Alamos projects must satisfy ES&H regulatory requirements, which may necessitate additional ES&H analyses, approvals or special permits. NOTE: You are not required to complete ES&H actions before *submission* of this proposal, but you must include estimates of the schedule and cost of ES&H compliance as part of your proposal.

| 1. Preliminary ES&H Determinations (Ref. AR 1-10, ES&H Questionnaire): | Yes | No |
|---|---|---|
| (a) Will this Project involve any construction, renovation, remodeling, or decommissioning activities? | ☐ | ☒ |
| (b) Will this project generate any airborne emissions or liquid effluents? | ☐ | ☒ |
| (c) Will this project involve any high-energy sources (e.g., radiation, electromagnetic radiation, lasers, propellants, explosives)? | ☐ | ☒ |
| (d) Will this project involve any toxic, carcinogenic, corrosive, biological (including blood or organs), radioactive, or infectious chemicals or agents? | ☒ | ☐ |
| (e) Will this project generate or transport any waste materials that are classified as radioactive waste, mixed waste, or hazardous waste per 40 CFR, or the Los Alamos National Laboratory's *Environment, Safety, and Health Manual*, "Administrative Requirements?" | ☒ | ☐ |

If "yes," consult ES&H Manual, section AR 1-10, ES&H Questionnaire, and contact your Division ES&H Representative for guidance.

| 2. Laboratory Oversight Committees: | Yes | No |
|---|---|---|
| (a) Will this project involve the use of firearms or firearms ammunition? (Firearms Safety Committee, OS-DO/SPO, 5-3505) | ☐ | ☒ |
| (b) Will this project involve the use of bulk explosives or explosive articles? (Explosives Review Committee, M-1, 7-9737.) | ☐ | ☒ |
| (c) Will this project involve the use of human subjects or infectious biological agents? (Human Studies Review Committee, HS-2, 7-7251.) | ☐ | ☒ |
| (d) Will this project involve the use of animal research subjects? (Animal Care and Use Committee, IS-I, 7–0894.). | ☐ | ☒ |
| (e) Will this project involve the use of fissile materials? (Nuclear Criticality Group, HS-6, 7-7628, and/or the Reactor safety Committee, HS-2, 7-7389.) | ☐ | ☒ |

If "yes," contact the Laboratory oversight committee indicated and provide additional information on the supplemental sheet.

| 3. Operational Hazards: | Yes | No |
|---|---|---|
| Will this project involve any operational hazards (physical, environmental, electrical, etc.)? | ☐ | ☒ |

If you have checked "yes" on any of the ...ve, please include a short description on the supplemental sheet.

**Los Alamos**
NATIONAL LABORATORY

**Work for Others**
**Environmental, Safety, and Health (ES&H) Documentation for Proposals**

**4. Aviation Operations:**

**Does this project involve aviation operations as defined by ASDP Notice #29?** Yes ☐ No ☒
**If "yes" contact Operational Safety, HS-5, 5—5511, ad complete this section.**

**Concise Description of Proposed Aviation operations:**

Aircraft **Operator/Owner:**

☐ DoD ☐ OFA/Government ☐ DOE ☐ Commercial Charter

[redacted] **Operational Safety (HS-5)** **Date**

**5. Proposed National Environmental Policy Act (NEPA) Category:**

**Contact EM-8, 5-5717 or 5—0458, for assistance and guidance in selecting one NEPA category as a preliminary recommendation. DOE makes the final determination.**

☐ **Categorical Exclusion A (CX-A)** (Division ES&H Representative can make preliminary recommendation.)
☒ **Categorical Exclusion B (CX-B)** (EM-8 must make preliminary recommendation.) Prior NEPA doc.
☐ **Environmental Assessment (EA)** (EM-8 must make preliminary recommendation.)
☐ **Environmental Impact Statement (EIS)** (EM-8 must make preliminary recommendation.)

**Brief Description (for CX-B, EA. or EIS):**
Categorical exclusion for indoor bench scale research project.
Ref: "NEPA Categorical Exclusion for New system for Testing Materials/Protection Against Asbestos."
DOE Identification No.: LAN-93-103
Determination pending

[redacted] **NEPA Representative (EM-8)** Margaret A. Powers 12/5/93

| Project Leader | Date | Division ES&H Representative | Date |
|---|---|---|---|
| [signature] | 12/3/93 | [signature] | 12-10-93 |

## supplemental Sheet

| Item | Information |
|---|---|
| id | An ES&H questionnaire was submitted to the appropriate parties. We envision no difficulties even though asbestos will be used. The apparatus will operate under negative pressure with dud HEPA filters. The exhaust on the fume hood in which experiments will be conducted is also fitted with a HEPA filter. |
| le | Waste will be handled in accordance with Laboratory procedures. |

**DNA**

# Los Alamos
NATIONAL LABORATORY

## Work for others
Proposal Approval

| LANL Proposal Number | Project | LANL Program Code |
|---|---|---|
| R-1291-94-0 | New ☐ Continuing ☒ | RX85 |

**Proposal Title**
Decade ANTHEM Modeling Support

**Sponsoring Agency**
Defense Nuclear Agency

| Agency contact | Telephone |
|---|---|
| Maj. James E. Rowley | (703)325-1117 |

**Agency Mailing Address**
6801 Telegraph Rd., Alexandria, VA 22310-3398

| originator | org. | MS | Telephone | Signature | Date |
|---|---|---|---|---|---|
| Rodney J. Mason | X-1 | F645 | 7-5520 | Rodney J Mason | 11/30/93 |

## Approvals

| Approved by | Org | MS | Phone | Approve | Revise | Signature | Date |
|---|---|---|---|---|---|---|---|
| Line<br>R. J. Juzaitis | X-DO | B218 | 7-5496 | ☑ | ☐ | D Wolchuk for | 12-1-93 |
| Program<br>M. Pongratz | SST-7 | D466 | 7-4740 | ☑ | ☐ | RJ Mason for M. Pongratz | 12-1-93 |
| Financial<br>M. Cecilia Lujan | BUS-2 | A111 | 7-2680 | ☑ | ☐ | Cecilia Lujan | 12/1/93 |
| DoD/BUS*<br>W. L. Kirchner | DoD | 11<br>F613 | 17-17751 | ☑ | 1 ☐ | W L Kirchner | 12/3/93 |

•Director's approval is required for special •ccess programs.

Maj. Rowley being sent an informational copy of this proposal. If you have any questions about this proposal, please call M. Pongratz at (505) 667-4740 or R. Mason at (505) 667-5520.

Sincerely,

Walter L. Kirchner
Program Director for Department Of Defens Programs

A—em a/s

Cy: Rodney J. Mason, X-l, MS F645
Morris Pongratz, SST-7, MS D466
Douglas Wilson, X-l, MS F645
R. J. Juzaitis, X-DO, MS B218
J. A. W-, FIN-16, MS B218
G. J. Garcia, BUS-2. MS A111
CRM-4, MS A150

**Los Alamos**
NATIONAL LABORATORY

*Department of Defense Programs*
DoD, MS F613
L—— New Mexico 87545
(——1775 FAX 665-5739

*Date:* December 1, 1993
*Refer to:* R-1291-94-0

US Department of Energy
Attn: Robert Y. Lowrey, D_
Work for Others Technology Division (WFOTD)
DOE Albuquerque operations office
P. O. Box 5400
Albuquerque, NM 87185-5400

Dear Mr. Lowrey:

Los Alamos proposal R-1292-94-0, Decade ANTHEM Modeling Support

The attached proposal is to continue providing the Defense Nuclear Agency (DNA) with a numerical modeling capability crucial to the development of a next generation of nuclear effects simulation facilities. The implicit ANTHEM plasma code will be upgraded and documented for use in the modeling the planned DNA decade simulator. This joint DoD/DOE code development program is on the frontier of new numerical methods, and would contribute directly to national security.

The proposed work requires the Laboratory's unique capabilities Of Plasma simulation code and modeling expertise and powerful computing facilities.

The proposed work is within the scope of the Laboratory Institutional Plan, and can be done without interference with other current or future DOE commitments at an estimated cost $30K in FY 94.

To the best of my knowledge. this work will not place the Laboratory in direct competition with the public or private sector.

If you concur with the contents this proposal, please forward it to the following agency:

Defense Nuclear Agency
Attn: Maj. James E. Rowley
6801 Telegraph Road
Alexandria, VA 22310-3398

It would also be helpful if you would send an informational copy of the funding document directly to the following individual:

Los Alamos National Laboratory
Attn: M. Pongratz
SST-7
P. O. Box 1663, MS D466
Los Alamos, NM 87545

Technical questions should be directed to the Project Leader, Rodney J. Mason, (505)667-5520.

Sincerely,

Walter L Kirchner
Program Director for Department Of Defense Programs

Enclosures: a/s

Cy: Rodney J. Mason, X-1, MS F645
Morris Pongratz, SST-7, MS D466
Douglas Wilson, X-l, MS F645
R. J. Juzaitis, X-DO, MS B218
J. A. Williams, FIN-16, MS B218
G. J. G- BUS-2, MS A111
CRM-4, MS A150

**Los Alamos**
NATIONAL LABORATORY

*Department of Defense Programs*
DoD, MS F613
Los Alamos, New Mexico 87545
(506)666-64, FAX 665-409

*Date:* December l, 1993

*Refer to:* R-1291-94-0

Defense Nuclear Agency
Attn: Maj. James E. Rowley
6801 Telegraph Rd.
Alexandria, VA 22310-3398

Dear Maj. Rowley:

**Los Alamos** Proposal **R-1291-94-0,** Decade **ANTHEM Modeling** Support

Enclosed is a copy Of Los **Alamos** Proposal **R-1291-94-0.** This copy **of the** proposal **is** being sent to you for your information only. The official **transmittal** the proposal **will** be from the **Department** Of Energy, Albuquerque Operations Office **(DOE/AL). To** assist you **in** working with **DOE/AL,** we have enclosed their administrative **instructions** and the DOE brochure for doing work with the DOE.

If the Defense Nuclear Agency decides **to** fund the **proposed effort,** the funding document should be sent to the following:

US Department Of Energy
Attn: **Robert Y. Lowrey,** Director
Work for Others Technology Division **(WFOTD)**
DOE Albuquerque Operations Office
P. O. Box 5400
Albuquerque, NM 87185-5400

The funding document should include the following information:

l. Los **Alamos** National Laboratory's AM's) proposal number and title,
2. LAM's technical **contact,**
**3.** Sponsoring agency's technical **contact,**
4. Non Competition Statement (refer attached administrative instruction #3),
5. Statement **as to** whether **or not this** program is **incrementally funded (refer to** attached administrative instruction #6).

The DOE requires that you state that the project **is unclassified** and that no **classified** material will be generated during the course of this work. Please provide **this** information to the DOE along with the funding document

# A Proposal for

# Decade ANTHEM Modeling Support

**To be Performed by:**

**Los Alamos National Laboratory**
**Los Alamos, NM 87545**
**(under DOE contract W-7405-ENG-36)**

**Submitted to:**

**Defense Nuclear Agency**
**6801 Telegraph Rd.**
**Alexandria, VA 22310-3398**

**Proposed by:**

**Rodney J. Mason**

**December l, 1993**

# Decade ANTHEM Modeling Support

## I. Introduction

DECADE DNA's advanced X-ray nuclear weapons effects simulator which will be capable of irradiating ensemble of electronics (10,000 $cm^2$) to JCS threat levels. In addition, DECADE Will provide an order of magnitude increase in soft x-ray test capability for optics and materials testing.

## II. Technical Description

DNA is in the process of fielding the DECADE simulator. The technical basis of the DECADE simulator Inductive Energy Storage. The use of IES requires a fast opening switch. DECADE will use a Plasma Opening switch (POS), in which a conducting plasma carries current for some period of time and then quickly becomes non-conducting, or opens. The opening of the switch is associated with a break in the switch plasma, or a gap, which forms in the plasma at some point in its span and grows to form a region through which Current Cannot flow. The physics of the POS is well enough understood to make the DECADE POS function as necessary, but still requires some elucidation for the purposes of improving POS performance, especially in the areas of jitter and the introduction of electrons into the transmission lines between the POS and the radiation source load, otherwise known as vacuum power flow.

DNA has approached the POS problem from several directions: from the point of view of engineering the DECADE POS, from the point of view of experimental investigation of DECADE and other POSs, and from the point of view of developing an analytic and computational understanding of the POS. One of the computational tools used in the analytic/computational investigation has been the ANTHEM particle/fluid hybrid MHD code.

Though previous efforts, the ANTHEM code has been documented and improved. The improvements include enhanced computational efficiency, i.e., the code has been made faster. It is appropriate this time to apply the code with a narrow focus to a specific aspect of the POS which may have an impact on switch jitter and vacuum power flow. That aspect of the POS is the initiation of the opening phase, or the transition of the switch from a conducting computational mesh to the problem, one capable resolving the phenomena within the non conducting switch gap.

## III. Proposed Scope Of Work

LANL shall conduct ANTHEM simulations, using a highly refined computational mesh, of a POS in conduction and opening phases to include the beginning of the transition from POS conduction phase to POS opening phase, and focusing on the initial stages of gap formation. These simulations shall be based on specific DECADE-applicable switch hardware geometries and plasma parameters such as the HAWK or the DPM1 or DM1 switches. LAM shall also provide support to NRL in performing similar simulations.

## IV. Schedule/Milestones

Work will begin at Los Alamo. upon receipt Of authorization from the Department of Energy, Albuquerque Operations Office, to proceed with the proposed project.

**Milestones**

| | |
|---|---|
| Implementation of refined mesh computational domain | -Feb '94 |
| Refined mesh simulations begun | -May '94 |

## V. Financial Requirements

The cost estimate for the proposed project is shown on the attached Funding Prof. and Cost Estimate Summary. If funding is received three months or more after the proposed start of the project, the cost estimate is subject to revision.

## VI. Reporting

The deliverable for this proposal will be quarterly technical summary.

## VII. Management and personnel

Rodney J. Mason, (505) 667-5520, MS F645, is the Project Leader responsible for the technical, schedule, and financial performance of the work. The Project Leader is the principal point Of Contact with the sponsor.

M. Pongratz, (505) 667-4740, MS D466, is the Program Manager responsible for the overal execution of the proposed project, liaison between LOS Alamos and the Sponsoring agency, and sponsor satisfaction.

## VIII. Property Management

Property. buildings/structures, and/or equipment that is acquired with sponsor funding will be disposed of according to instructions provided by the sponsor. Otherwise, capital equipmen will revert to the DOE and be retained at the Laboratory at the termination of the project.

## IX. ES&H Issues

Not applicable.

## X. Classification and Security

This project will not involve generating or handling classified information or materials at Los Alamos. At the time the funding document is sent to the DOE, the sponsor will provide a written statement indicating that the project is unclassified.

## XL Related Work/Technical References

1. R. J. Mason and C. Cranfill, "Hybrid Two-Dimensional Monte-Carlo Electron Transport in Self -Consistent Electromagnetic Fields," IEEE Trans. Plasma Sci. PS-14, 45 (1986).
2. Mason and W.H. Choe, 'ANTHEM Code Studies of Spontaneous Magnetic Field Generation in Laser-Matter Interaction," Bull. Am Phys. SW. 35, 2123 (1990).
3. RJ. Mason. "h electromagnetic Field Algorithm for 2D Implicit Plasma simulation? J. Comput. Phys. 71, 426 (1987).
4. RJ. Mason, J.M. Wallace, J. Grossmann and P. Ottinger, "Implicit Collisional Three-Fluid simulation Plasma Opening Switches." IEEE Trans. plasma Sci. PS-15, 715 (1987).
5. RJ. Mason, ME. Jones, J.M. Grossmann and P.F. Ottinger, "Three-Fluid Simulation of the Plasma Erosion Opening Switch J. Appl. Phys. 64, 4208 (1988).
6. RJ. Mason and M.E. Jones, "simulation Of Plasma Opening Switches in *proceedings of the Seventh International Conference on High Power particle Beams,* 4-8 July 1988, Karlsruhe, Federal Republic Of Germany.
7. R.J. Mason, M.E. Jones, J.M. Grossmann and P.F. Ottinger, "Magnetic Field Penetration Of Erosion Switch Plasmas," Phys. Rev. Lett., 61, 1835 (1988).
8. RJ. Mason, M.E. Jones and C. Bergman, "ANTHEM Simulation of plasma Opening Switches," in *Proceedings of the 7th IEEE Puked Power Conference,.* Monterey CA, June 11-14, 1989, p. 255.
9. RJ. Mason, M.E. Jones and C. D. Bergman, "Numerical Simulation of Plasma Opening Switches," in *Proceedings of the International Workshop on Physics and Technique of High Power Opening Switches,* July 1-2, 1989, Novosibirsk, USSR
10. K. Thiem and RJ. Mason, "Implicit Simulation Of Plasma Opening Switches with the ANTHEM Code," Bull. Am. Phys. 35, 1963 (1990).
11. RJ. Mason, "Analysis and Numerical Simulation of Soviet Plasma Opening Switches," Los Alamos Report LA-UR-89-4283, Jan. 8, 1990.
12. RJ. Mason, MoE. Jones, D.C. Wilson, C.Bergman, K. Thiem, J.M. Grossmann, and P.F. Ottinger, "calculated Non-linear Field Penetration Of Plasma Opening Switches," in *Proceedings of the 1990 International Conference on High Power particle Beams, Beams '90,* Novosibirsk USSR, July 2-5, 1990, Vol. 2, p. 1058.
13. J.M. Grossman, P.F. Ottinger, D. Mosher, and R.J. Mason, "Cathode Emission Processes in the PEOS," Bull. Am. Phys. SW. 35, 2055 (1990).
14. RJ. Mason, R.N. Sudan, P. Auer, C. Seyler, B.Oliver, J. Greedy, and L. Adler, Theory and Simulation of Laboratory plasma Opening Switches," *Proceedings of the 8th IEEE International Puked Power Conference, San* Diego, CA June 17-19, 1991, p. 529.
15. B.V. Oliver, L.I. Rudakov, RJ. Mason, and P.L. Auer, "self-similar Scaling of Magnetic Field Penetration into a Homogeneous, Collisionless Plasma due to Electron Velocity Advection," Phys. Fluids B 4, 294 (1992).
16. RJ. Mason, "ANTHEM Simulational Studies of the plasma Opening Switch," in the *Proceedings of the 9th International Conference on High Power particle Beams, Beams '92,* May 25-29, 1992, to be published.

17. H.A. Davis, "plasma Opening Switch for Long-Pulse Intens Ion Beam," in the *Proceedings of the 9th International Conference on High Power Particle Beam, Beams* 92, May 25-29. 1992, to be published.
18. R.J. Mason, P. Auer, RN. Sudan, B. Oliver. C. Seyler and J. Greenly, "Non-Linerar Magnetic Field Transport in Opening Switch Plasmas," accepted for publication in Phys Fluids B.
19. R.J. Mason and P.L. Auer. "Ion Dynamical and EMHD Effects in *Plasma* Opening Switches," Bull. Am. Phys. SW. 37, 1564 (1992).

**Los Alamos**
NATIONAL LABORATORY

**Work for Others**
**Funding Profile and**
Cost **Estimate Summary**

**LANL Proposal Number:** R-1291-94-0 **LAM Program Code:** RX85

**Proposed Starting Date:** 12/153 **Proposed** Completion Date: 9/30/94

| Costs ($ in thousands) | Prior FY | FY94 | FY95 | FY96 | Total |
|---|---|---|---|---|---|
| Total direct FTE cost | 47.4 | 21.4 | | | 68.8 |
| Overhead | 62 | 5.7 | | | 11.9 |
| Materials and services | 4.5 | 2.0 | | | 6.5 |
| Subcontracts and major procurement | | | | | |
| **Total operating costs** | 58.1 | 29.1 | | | 87.2 |
| DOE departmental overhead* | 1.9 | .9 | | | 2.8 |
| Total operating costs, including departmental overhead | 60.0 | 30.0 | | | 90.0 |
| continuity funding** | | | | | |
| TOTAL FUNDS REQUESTED | 60.0 | 30.0 | | | 90.0 |

* A DOE departmental overhead rate of 3.2% in FY94 (4.3% in FY95 and beyond) is incorporate into the total funding requirements to recover DOE costs incurred in the management an oversight of non-DOE-sponsored programs.

.* To ensure program continuity, a minimum of three month's level–of-effort funding is required by the Department of Energy, Albuquerque Operations Office.

—10/93)

($ IN THOUSANDS)

| Proposal No. | Form8 Code | FUNDING AGENCY | TITLE |
|---|---|---|---|
| R-1291-94-0 | RX85 | DNA | dim Support |

| Z-Number | Program Manager | Office | Mail Stop | Telephone |
|---|---|---|---|---|
| 081397 | Morris Pongratz | SST-7 | D466 | |
| Z-Number | Project Leader | Office | Mail Stop | Telephone |
| 079767 | Rodney Mason | X-I | F645 | |
| Z-Number | Division Fiscal Contact | Organization | Mail Stop | Telephone |
| 093512 | Joan Williams | BUS &/9 | B218 | |
| Z-Number | Pm———con—t | Organization | Mail Stop | Telephone |
| 085948 | M. Cecilia Lu ian | BUS-2 | A111 | |

| INPUT REQUIRED: | Program AD | Program Director | MTA | AA | For FIN use only: |
|---|---|---|---|---|---|

| Organization | # SM FTE | SM Salary | # Other FTE | Other Salary | Tow Salary | BZ.80% Burden | Total FTE Costs | Materials & Services | Major Procurement | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X-I (9401) | 0.12 | 11.7 | 0.0 | 0.0 | 11.7 | 9.7 | 21.4 | 2.0 | | | 4 |
| Sup | | | | | | | | 5.3 | | | 3 |
| Prog | | | | | | | | 0.4 | | | 4 |
| | 0.12 | 11.7 | 0.0 | 0.0 | 11.7 | 9.7 | 21.4 | 7.7 | | | 1 |

Please check appropriately.
New Continuing X

Is any part of this project classified?
Yes No X

Do these costs cover any construction or modification of facilities?
Yes No X

SUMMARY

| | |
|---|---|
| Total Operating Cost | 1 |
| DOE Departmental Overhead (3.2% of TotlOperating Cost) | 9 |
| Total Including Departmental Overhead | 0 |
| Continuity Funding | |
| TOTAL REQUESTED | 30.0 |

| Completed by: | Date: | Financial Approval: | |
|---|---|---|---|
| J. A. Williams | 1211193 | | 2/1 |

** PLEASE- SPECIAL ACCESS PROGRAMS REQUIRE THE APPROVAL OF THE LABORATORY DIRECTOR
(S— W—t-o Memo dated 29 May I—)

**Los Alamos**
NATIONAL LABORATORY

**Work for Others**
**proposal Summary Information**

**LANL Program Code:** RX85 ✓
**B&R Number:** 40-04-03-70-1

**l. Pro-:**

Decade ANTHEM Modeling Support

**2. LANL Project Leader:**

Rodney J. Mason
X-l
7-5520

**3. LAW Program Manager:**

M. Pongratz
SST-7
7–4740

**4. Sponsoring Agency:**

Defense Nuclear Agency
6801 Telegraph Rd.
Alexandria, VA 22310-3398

**5. Sponsoring Agency Contact:**

Maj. James E. Rowley
DNA Technical Manager
(703) 325-1117

**6. Technical Description:**

The objective this effort is to apply ANTI–EM with a highly refed mesh to the POS during its transition from a conductor to a nonconductor for the purposes resolving and illuminating the pertinent phenomena during that transition at the position of the creation of. nonconducting gap.

LANL shall conduct ANTHEM simulations using a highly refined computational mesh of a POS in conduction and opening phases to include the beginning of the transition from POS conduction phase to POS opening phase. and focusing on the initial stages of gap formation. These simulations shall be based on specific DECADE-applicable switch hardware geometries and plasma parameters such as the HAWK or the DPM1 or DM1 switches. LANL shall also provide support to NRL in performing similar simulations.

**7. Unique LANL Capability:**

The work will contribute to U.S. security by providing a crucial modeling capability essential for the design the new Decade advanced x-ray nuclear effects simulator. Decade and follow on machines are based on inductive storage techniques requiring plasma opening switch% which can only be accurately modeled by LANL's ANTHEM computer code. The code does implicit plasma simulation permitting it to run up to 100 times faster than alternate explicit models. Thus, treatment of long time scale switches is possible with ANTHEM but impractical with alternate models. The code was developed by the P.I. at Los Alamo..

**8. Deliverables:**

Quarterly technical summaries

**9. Schedule and Milestones:**

Proposed starting date: 12/15/93 Proposed completion date: 9/30/94
Major milestones by fiscal year

| Description | Date |
|---|---|
| Implementation of refined mesh computational domain | Feb 1994 |
| Refined mesh simulations begun | May 1994 |

**10. Funding Profile ($ in thousands) by Fiscal Year (m):**

| Prior FYs | FY94 | FY95 | FY96 | FY97 | Total |
|---|---|---|---|---|---|
| [illegible] * | [illegible] | | | | [illegible] |

* Prior FY funding: FY93 funding $60K under proposal #R-174-93-00

Il. **LANL Program Area (select one):**

| | | | | | |
|---|---|---|---|---|---|
| **(a)** | Nuclear Weapons **RD&T** | ☐ | **(h)** | **Environment** | ☐ |
| **(b)** | **Nuclear Materials** | ☐ | **(i)** | **Industry** | ☐ |
| (c) | **Reconfiguration/Complex 21** | ☐ | **(j)** | **Space** | ☐ |
| (d) | **Defense Technologies** | ☒ | **(k)** | **Transportation** | ☐ |
| **(e)** | **Intelligence** | ☐ | **(l)** | **Health and Biotechnologies** | ☐ |
| (0 | **Nonproliferation** | ☐ | **(m)** | **Basic Research** | ☐ |
| **(g)** | **Energy** | ☐ | | | |

**12. Additional Information: Provide additional information for "yes" answers on the supplemental sheet.**

| | | | |
|---|---|---|---|
| **(a)** | **Are other DOE facilities involved?** | y.. ☐ | **No** ☒ |
| **(b)** | **Is there private industry or university involvement?** | Yes ☐ | **No** ☒ |
| **(c)** | **Will there be construction/facility** modifications? | Yes ☐ | **No** ☒ |
| **(d)** | **Are them planned capital equipment acquisitions?** | Yes ☐ | **No** ☒ |
| **(e)** | **Is there a related Memorandum of Understanding or** Memorandum **of Agreement?** | Yes ☐ | **No** ☒ |
| **(f)** | **Are foreign nationals/organizations involved?** | Yes ☐ | **No** ☒ |
| **(g)** | **Will there be work/travel outside** the **continental US (OCONUS)? If "yes," complete WFO-7, OCONUS** Activity Questionnaire. | Yes ☐ | **No** ☒ |
| **(h)** | **Does this** Work involve **ADP procurement ? (This includes computer equipment,** software, and **telecommunications.)** | **Yes** ☐ | **No** ☒ |
| **(i)** | **Do services provided constitute sharing of excess data processing** capacity with **users** from **another government agency?** | **Yes** ☐ | **No** ☒ |
| **(j)** | **Are there** plans to use subcontractors? **Attach brief description of and** justification for **subcontracting on** supplemental **sheet.** **Estimated total subcontract... $** **Estimated subcontract % of total costs: %** | **Yes** ☐ | **No** ☒ |
| **(k)** | **Will the work be sold back to DOE?** | **Yes** ☐ | **No** ☒ |
| **(l)** | **Will** there **be** radio **frequency** spectrum applications? | **Yes** ☐ | **No** ☒ |
| **(m)** | **Is this a jointly funded project?** | **Yes** ☐ | **No** ☒ |

(n) **Does project involve space nuclear reactor, noncommercial power reactor, or radioisotope power source work (excluding NRC, fusion and weapons-ted activities, naval propulsion reactors, and experimental reactors)? (DOE N 4300.4 dated 1/14/93.)** Yes ☐ No ☒

(o) **Does project involve nuclear proliferation detection technology-related non-DOE funded work? (DOE 4300.2B,** Change 3, paragraph **10.k.(14)** dated 1/7/93.) If "yes," send information copy of this proposal to the Director for Nonproliferation and **International** Security **(NIS),** MS **F650.** Yes ☐ No ☒

(p) **Preliminary Security Classification:**

☒ **unclassified**

**The Sponsor must provide a statement, along** with the funding **document,** that **states** that the project **is unclassified** and that no **classified material will** be generated during the course of this work

☐ **Classified** (Insert Level)

**The Sponsor has provided classification guidance for this project (see attached** WFO-6, "classification Guidance and Security considerations **Certification,"** Item l).

This project involves special security interests as defined in DOE Order **5634.1B,** Chapter II. page **II-8,** paragraph **3b.** (see attached WFO-6, **"Classification** Guidance and Security Considerations Certification," Item 2).

**Note: If this is a special access program, contact Terry Hawkins, DD/NIS at 7-121**

(q) **Environment, Safety & Health Issues**

**A completed and signed WFO-5, "Environmental,** Safety, and Health **(ES&H) Documentation for Proposals"** form **must be included in the proposal package**

# Los Alamos
NATIONAL LABORATORY

## Work for Others
## Environmental, Safety, and Health (ES&H)
## Documentation for Proposals

| LANL Proposal Number | Project | LANL Program Code |
|---|---|---|
| R-1291-94-9 | New ☐ Continuing [X] | RX85 |

**Proposal Title**
Decade ANTHEM ding s—

**Sponsoring** —Y
Defense Nuclear Agency

| Agency Contact | Telephone |
|---|---|
| Maj. James E. Rowley | 003) 325-1117 |

**Agency** Mailing Address
6801 Telegraph Rd., Alexandria, VA 22310-3398

| Project Leader | Org. | MS | Telephone |
|---|---|---|---|
| Rodney J. Mason | X-1 | F645 | 7-5520 |

[redacted]

**All Los Alamos** projects must satisfy **ES&H regulatory requirements, which mav necessitate** additional **ES&H** •nslyq •pprova or special **permits. NOTE: You are not required to complete ES&H** •ctions before **submission of this proposal, but you must include estimates of the schedule and cost of ES&H compliance as part of your proposal.**

| l. **Preliminary ES&H Determinations (Ref.** AR I-IO, **ES&H** Questionnaire): | Yes | No |
|---|---|---|
| (4 **Will this project involve any construction, renovation, remodeling, or decommissioning activities?** | ☐ | [X] |
| (b) **Will** this project **generate** any **airborne** emissions **or** liquid effluents? | ☐ | [X] |
| (C) **Will** this **project involve** any **high-energy** sources (e.g.. **radiation, electromagnetic radiation, lasers, propellants,** explosives)? | ☐ | [X] |
| (d) **Will this project involve any toxic, carcinogenic, corrosive, biological (including blood or organs), radioactive, or infectious** chemicals **or** agents? | ☐ | [X] |
| (e) **Will this** project **generate** or **transport any waste materials** that arc -d **as radioactive waste,** mixed **waste,** or **hazardous** waste . 40 CFR, or the **Los Alamos National Laboratory's** *Environment, Safety, and Health Manual,* **"Administrative Requirements?"** | ☐ | [X] |

**If "yes,"** consult **ES&H Manual, Section AR** 1-10, **ES&H Questionnaire,** •nd contact **your Division ES&H Representative** for guidance.

| 2 Laboratory Oversight Committees: | Yes | No |
|---|---|---|
| (a) **Will this project involve the use of firearms or firearms ammunition?** (Firearms Safety Committee, OS-DO/SPO, 5-3505) | ☐ | [X] |
| (b) **Will this project involve the use of bulk explosives or explosive articles?** (Explosives Review Committee, M-l, 7-9737.) | ☐ | [X] |
| (c) **Will this project involve the use of human subjects or infectious biological agents?** (Human Studies view Committee, HS-2, 7-7251.) | ☐ | [X] |
| (d) **Will this project involve the use of animal research** subjects? (Animal Care and USC Committee, LS-1, 794.) | ☐ | [X] |
| (e) **Will this project involve the use of fissile materials?** (Nuclear Criticality Group. HS-6, 7-7624, and/or the —safety Committee, HS-2, 7-7389.) | ☐ | [X] |

If **"yes,"** contact the **Laboratory oversight committee indicated** •d **provide additional information** on the supplemental **sheet.**

| 3. Operational Hazards: | Yes | No |
|---|---|---|
| **Will this** project involve any operational **hazards (physical, environmental, electrical,** etc.)? | ☐ | [X] |

If **"yes," you may need an approved SWP or SOP and special training before commencing work.**

**If you have checked "yes" on any of the above, please include a short description on the supplemental sheet.**

**4. Aviation Operations:**

Does this project involve aviation operations as defined by ASDP Notice #29? If "yes," contact Operational Safety, HS-5, 5-5511, and complete this section.

Yes ☐ No ☒

**Concise Description of Proposed Aviation Operations:**

J DOD

**Operator/Owner:**

☐ OFA/Government ☐ DOE ☐ Commercial Charter

| Aircraft | Operational Safety (HS-5) | Date |
|---|---|---|
| | | |

**5. Proposed National Environmental Policy Act (NEPA) Category:**

Contact EM-8, 5-5717 or 5—0458, for assistance and guidance in selecting one NEPA category as a preliminary recommendation. DOE— the final determination.

- ☒ **Categorical Exclusion A (CX-A)** (Division ES&H Representative can make preliminary recommendation.)
- ☐ **Categorical Exclusion B (CX-B)** (EM-8 must make preliminary recommendation.)
- ☐ **Environmental Assessment (EA)** (EM-8 must make preliminary recommendation.)
- ☐ **Environmental Impact Statement (EIS)** (EM-8 must make preliminary recommendation.)

**Brief Description (for CX-B, EA, or MS):**

| | NEPA Representative (EM-8) | Date |
|---|---|---|
| | | |

| Project Leader | Date | Division ES&H Representative | Date |
|---|---|---|---|
| Rodney J Hanson | 11/30/93 | D Wolkenhauer | 12-1-93 |